

IAP4 Rec'd PCT/PTO 21 NOV 2005

10/519845

Québec, Canada
November 17, 2005

File No. 14149-12US MG/lyl



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Medicago Inc.
Inventors: Dominique Michaud et al.
Serial No.: 10/519,845 I.A.Filing date: July 29, 2003
Art Unit: ----
Title: METHOD FOR ENHANCING THE NUTRITIVE VALUE OF
PLANT EXTRACT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Sir:

Pursuant to the duty of disclosure under 37 CFR 1.56, copies of the references listed on the attached PTO Form SB/08A/B are submitted herewith.

The Commissioner is hereby authorized to charge the fee of \$180.00, required for late submission of this Information Disclosure Statement in accordance with 37 CFR 1.97(c), to Deposit Account Number 19-5113. The Commissioner is further authorized to charge any fees which may be required, or credit any overpayment to the Deposit Account # 19-5113.

In accordance with 37 CFR 1.97(h), the submission of the present information is not to be construed as an admission that such information is, or is considered to be material to patentability.

The Examiner is kindly requested to consider these references during the examination of the above-identified application, making the references of record, and to return an initialed copy of the Form SB/08A/B to the undersigned agent.

Respectfully submitted,

MEDICAGO INC.

By: 

Sébastien Clark
Patent Agent

Registration No. 56,651

OGILVY RENAULT, LLP

Customer No. 020988

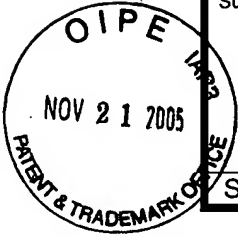
1981 McGill College Avenue, Suite 1600

Montreal, Quebec, Canada H3A 2Y3

Tel. (514) 847-4259

Encls: Copies of references
Form PTO/SB/08A/B

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.



Substitute for form 1449A and B/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

| | | | |
|-------|---|----|---|
| Sheet | 1 | of | 5 |
|-------|---|----|---|

Complete if Known

| | |
|------------------------|--------------------|
| Application Number | 10/519,845 |
| Filing Date | January 13, 2005 |
| First Named Inventor | Dominique MICHAUD |
| Art Unit | |
| Examiner Name | |
| Attorney Docket Number | 14149-12US MG/llyl |

U.S. PATENT DOCUMENTS

[illegible]

FOREIGN PATENT DOCUMENTS

| Examiner Initials* | Cite No. ¹ | Foreign Patent Document | Publication Date MM-DD-YYYY | Name of Patentee or Applicant Of Cited Document | Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear | T* |
|--------------------|-----------------------|---|--------------------------------|--|--|----|
| | | Country Code3 – Number4 – Kind Code5 (if known) | | | | |
| | | WO 0011198 | 03-02-2000 | FADER | | |
| | | WO 9820133 | 05-14-1998 | RAO et al. | | |
| | | WO 0210415 | 02-07-2002 | LI et al. | | |
| | | WO 0125454 | 04-12-2001 | VEZINA et al. | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

| | | | |
|-----------------------|--|--------------------|--|
| Examiner Signature | | Date Considered | |
|-----------------------|--|--------------------|--|

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Substitute for form 1449A and B/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Complete if Known

| | |
|------------------------|-------------------|
| Application Number | 10/519,845 |
| Filing Date | January 13, 2005 |
| First Named Inventor | Dominique MICHAUD |
| Art Unit | |
| Examiner Name | |
| Attorney Docket Number | 14149-12US MG/lyl |

Sheet 2 of 5

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

| Examiner Initials* | Cite No. ¹ | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published | T ² |
|-----------------------|--------------------------|--|----------------|
| | | FRANCE BRUNELLE ET AL., « Protein hydrolysis by Colorado potato beetle, <i>Leptinotarsa decemlineata</i> , digestive proteases: The catalytic role of cathepsin D », Archives of Insect Biochemistry and Physiology, vol. 42, no.1, September 1999, pp 88-98. | ✓ |
| | | G.F. TREMBLAY ET AL., « Proteolysis in alfalfa silages made from different cultivars », Canadian Journal of Plant Science, vol. 81, no.4, October 2001, pp. 685-692. | ✓ |
| | | E. CHARMLEY ET AL., « Inhibition of proteolysis at harvest using heat in alfalfa silages effects on silage composition and digestion by sheep », Journal of Animal Science, vol. 68, no.3, 1990, pp. 758-766. | ✓ |
| | | WANDEL ET al., 1992, « Vicilin with carboxy-terminal KDEL is retained in the endoplasmic reticulum and accumulates to high level in the leaves of transgenic plants », Plant J. 2: 181-192. | ✓ |
| | | ODELL et al., 1985, « Identification of DNA sequences required for activity of the cauliflower mosaic virus 35S promoter », Nature, Vol.313:810-812 | ✓ |
| | | AN et al., 1987, « Binary Vectors », Plant Molecular Biology Manual, A3:1-19 | ✓ |
| | | VAN BREUSEGEM et al., 1998, « Processing of a chimeric protein in chloroplasts is different in transgenic maize and tobacco plants », Plant Molecular Biology, 38:491-496 | ✓ |
| | | CREISSEN ET AL., 1995, « Simultaneous targeting of pea glutathione reductase and of a bacterial fusion protein to chloroplast and mitochondria in transgenic tobacco », The Plant Journal, Vol 8(2):167-175 | ✓ |
| | | McKERSIE et al., March 1999, « Winter Survival of Transgenic Alfalfa Overexpressing Superoxide Dismutase », Plant Physiology, Vol. 119:839-847. | ✓ |
| | | Di SANSEBASTIANO et al., 1998, « Specific accumulation of GFP in a non-acidic vacuolar compartment via a C-terminal propeptide-mediated sorting pathway », Plant J. Aug;15(4):449-57. | ✓ |
| | | DANIELL et al., February 2002, « Milestones in chloroplast genetic engineering: an environmentally friendly era in biotechnology », Trends in Plant Science, Vol.7(2):84-91 | ✓ |

| | | | |
|-----------------------|--|--------------------|--|
| Examiner Signature | | Date Considered | |
|-----------------------|--|--------------------|--|

*EXAMINER; Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Substitute for form 1449A and B/PTO

Complete if Known**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

| | | | | | |
|-------|---|----|---|------------------------|-------------------|
| Sheet | 3 | of | 5 | Application Number | 10/519,845 |
| | | | | Filing Date | January 13, 2005 |
| | | | | First Named Inventor | Dominique MICHAUD |
| | | | | Art Unit | |
| | | | | Examiner Name | |
| | | | | Attorney Docket Number | 14149-12US MG/lyl |

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

| Examiner Initials* | Cite No. ¹ | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published | T ² |
|--------------------|-----------------------|--|----------------|
| | | BRANDLE et al., 1993, « <i>Field performance and heavy metal concentrations of transgenic flue-cured tobacco expressing a mammalian metallothionein-beta-glucuronidase gene fusion</i> », Genome 36:255-260. | ✓ |
| | | MICHAUD & YELLE, 2000, « <i>Production of useful Protease Inhibitors in plants</i> », in: Recombinant protease inhibitors in plants. Ed. Michaud Austin TX, pp. 195-206. | ✓ |
| | | D. MICHAUD et al., 1996, « <i>Assessing the stability of cystatin/cysteine proteinase complexes using midly-denaturing gelatin/polyacrylamide gel electrophoresis</i> », Electrophoresis 17:74-79 | ✓ |
| | | M. TAYLOR 2000, « <i>Using protease proregions as regulators of insect digestive proteinases</i> » In: Recombinant protease inhibitors in plants. Ed. Michaud Austin, TX, pp. 141-147. | ✓ |
| | | BUSSE et al., November 2001, « <i>Production of antibodies in alfalfa (Medicago sativa)</i> », Molecular Farming of Plants and Animals for the Application in Human and Veterinary Medicine, Kluwer Academic Publishers, Chapter 9:199-219. | ✓ |
| | | GUTIÉRREZ-CAMPOS R et al., 2001, « <i>Pleiotropic effects in transgenic tobacco plants expressing oryzacystatin I gene</i> », Hortscience 36:565-571. | ✓ |
| | | VIERSTRA, 1996, « <i>Proteolysis in plants: mechanisms and functions</i> », Plant Mol. Biol. 32:275-302. | ✓ |
| | | GLEDDIE & MICHAUD, 2000, « <i>The control of plant pathogens with protease inhibitors: A realistic approach?</i> », in: Recombinant protease inhibitors in plants. Ed. Michaud, Austin TX, pp. 53-64. | ✓ |
| | | D. MICHAUD., 2000, « <i>Protease inhibitor interactions in plant-pest systems</i> » In: Recombinant protease inhibitors in plants. Ed. Michaud, Austin TX, pp. 1-8 | ✓ |
| | | MICHAUD et al., 1998, « <i>Stability of recombinant proteins in plants</i> », Methods in Biotechnology, Recombinant proteins from plants: Production and isolation of clinically useful compounds. Ed. Cunningham & Porer, Totowa NJ, 3, pp 177-188. | ✓ |
| | | L. M. Tabe et al., 1995, « <i>A biotechnological approach for improving the nutritive value of alfalfa</i> » J. Plant Sci. 73:2752-2759. | ✓ |

| | | | |
|--------------------|--|-----------------|--|
| Examiner Signature | | Date Considered | |
|--------------------|--|-----------------|--|

*EXAMINER; Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Substitute for form 1449A and B/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet 4 of 5

Complete if Known

| | |
|------------------------|-------------------|
| Application Number | 10/519,845 |
| Filing Date | January 13, 2005 |
| First Named Inventor | Dominique MICHAUD |
| Art Unit | |
| Examiner Name | |
| Attorney Docket Number | 14149-12US MG/lyl |

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

| Examiner Initials* | Cite No. ¹ | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published | T ² |
|-----------------------|--------------------------|--|----------------|
| | | WILLIAMSON et al., 1988, « <i>The synthesis of a 19kD zein protein in Petunia</i> », Plant Physiology 88:1002-1007. | ✓ |
| | | GALILI, 1995, « <i>Regulation of Lysine and Threonine Synthesis</i> », Plant Cell. 1995 July 7(7):899-906 | ✓ |
| | | SCHOEDER et al., 1991, « <i>Expression of a chicken ovalbumin gene in three Lucerne cultivars</i> », Aust. J. Plant Physiol. 18:495-505. | ✓ |
| | | D. MICHAUD et al., 1993, « <i>Electrophoretic analysis of plant cysteine and serine proteinases using gelatin-containing polyacrylamide gels and class-specific proteinase inhibitors</i> », Electrophoresis. 14(1-2):94-98. | ✓ |
| | | BRADFORD, 1976, « <i>A rapid and sensitive method for the quantitation of microgram quantities of protein utilizing the principle of protein-dye binding</i> », Anal Biochem 72: 248-254. | ✓ |
| | | K. EDWARDS et al., 1991, « <i>A simple and rapid method for the preparation of plant genomic DNA for PCR analysis</i> » Nucleic Acids Res. 19:1349. | ✓ |
| | | J. LOGEMANN et al., 1987, « <i>Improved method for the isolation of RNA from plant tissues</i> », Anal Biochem 163:16-20. | ✓ |
| | | T. MURASHIGE & F. SKOOG, 1962, « <i>A revised medium for rapid growth and bioassays with tobacco tissue cultures</i> », Physiologia Plantarum 15: 473-497. | ✓ |
| | | H. WENZLER et al., 1989, « <i>A rapid and efficient transformation method for the production of large numbers of transgenic potato plants</i> », Plant Sci 63:79-85. | ✓ |
| | | R. WERNER et al., 1993, « <i>Nucleotide sequence of a cathepsin D inhibitor protein from tomato</i> », Plant Physiol 103:1473. | ✓ |

| | | | |
|-----------------------|--|--------------------|--|
| Examiner Signature | | Date Considered | |
|-----------------------|--|--------------------|--|

*EXAMINER; Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Substitute for form 1449A and B/PTO

Complete if Known**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet 5 of 5

| | |
|------------------------|-------------------|
| Application Number | 10/519,845 |
| Filing Date | January 13, 2005 |
| First Named Inventor | Dominique MICHAUD |
| Art Unit | |
| Examiner Name | |
| Attorney Docket Number | 14149-12US MG/lyl |

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

| Examiner Initials* | Cite No. ¹ | Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published | T ² |
|-----------------------|--------------------------|--|----------------|
| | | MICHAUD D. & ASSELIN A., 1995, « Application to plant proteins of gel electrophoretic methods », Journal of Chromatography A 698: 263-279 | ✓ |
| | | MICHAUD D., 1998, « Gel electrophoresis of proteolytic enzymes », Analytica Chimica Acta 372:173-185. | ✓ |
| | | BRUNELLE et al., 2003, « Colorado potato beetles compensate for tomato cathepsin D inhibitor expressed in transgenic potato », Archives of Insect Biochemistry and Physiology. | ✓ |
| | | CALLIS J., 1995, « Regulation of protein degradation », Plant Cell 7:845-857. | ✓ |
| | | XIE et al., 2001, « Bidirectionalization of polar promoter in plants », Nature Publishing Group, Vol. 19: 677-679 | ✓ |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

| | | | |
|-----------------------|--|--------------------|--|
| Examiner Signature | | Date Considered | |
|-----------------------|--|--------------------|--|

*EXAMINER; Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.